AL. 1. 1731
c.2

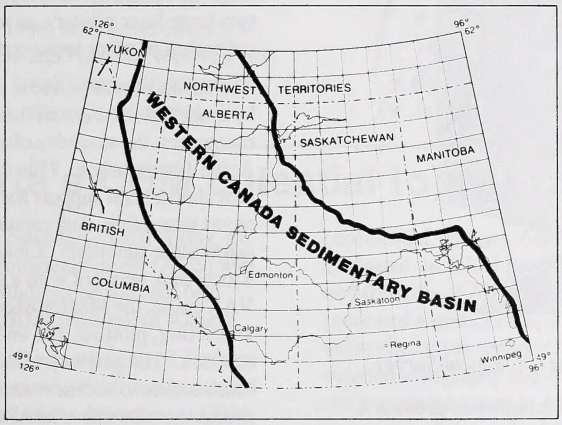
Alberta Geological Survey

ROCK CHIPS

A Newsletter published by the Alberta Geological Survey for the geoscience community of Alberta.

Spring/summer 1992

AGS finalizing geological atlas project



Base map for the Atlas of theWestern Canada Sedimentary Basin project headquartered at the Alberta Geological Survey.

After seven years of work on the new Geological Atlas of the Western Canada Sedimentary Basin, staff at the Alberta Geological Survey (AGS) are looking forward to holding a copy in their hands. Sample maps and figures will be on display in June at the Canadian Society of Petroleum Geologists convention and printed copies should be available, for the purchase price of $140 to $180, by the end of the year.

The AGS has a large stake in the success of the Atlas. Department facilities serve as headquarters for the Atlas project and AGS staff are responsible for project management. (The Atlas's project manager, Dr. Grant Mossop, formerly with AGS, is now with the Institute of Sedimentary and Petroleum Geology.)

"The Atlas is a high-profile project and it has been a major challenge from an organizational perspective," says Mike Prentice, business development and marketing manager for the Survey. "With so many people involved and so many data to analyze, the project required a solid framework and foundation to ensure its viability. We've called on the entire range of expertise at the Survey, from secretarial support to the work of senior computing geologists."

"The Survey was in an ideal position to take on the management role. We have strong links with government and industry in Alberta and the other western provinces."

On the technical side, one of the challenges that faced the Survey was selecting the well that best represented each township for mapping purposes. Given the vast volume of data (on approximately 200,000 wells), this was a formidable task. Computing software was developed to automate as many steps of the preliminary data assessment as possible. This software has proven to be a valuable tool in speeding up data processing and ensuring that the data are consistently interpreted across the basin.

Final production of the maps and figures has also been the responsibility of the AGS. Electronic graphics processing was chosen over more traditional manual methods because of the advantages in quality of output, flexibility and cost-effectiveness in revisions.

Although the Survey plays the major organizational role in the Atlas project, Prentice notes the project also involves hundreds of other individuals and dozens of institutions and corporations. Sponsors are Alberta Energy, the Alberta Research Council, the Canadian Society of Petroleum Geologists and the Geological Survey of Canada. Direct project costs of $2.8-million are dwarfed by an estimated total cost of $11-million including $1.3-million in donated data and $6.9-million in volunteers' manpower and

continued on page 3

Please address any questions or comments to Mike Prentice:

Contributing author - Connie Bryson

Alberta Geological Survey
Alberta Research Council
P.O. Box 8330, Station F
Edmonton, Alberta
T2P 5X2
(403) 438-7676

ALBERTA RESEARCH COUNCIL

The information revolution at AGS

Andre Lytviak coordinates computing support at the Alberta Geological Survey

In an ongoing program to improve its productivity and client services, the Alberta Geological Survey (AGS) has applied computers to an ever increasing proportion of its activities. As well as requiring a significant investment, this application has resulted in the development of both knowledge and new methods for managing large volumes of data.

"The system, constructed over the past 10 years, has fundamentally changed the way the department does business" says Andre Lytviak, coordinator of AGS computing support. He adds, "coordinating acquisitions without unduly restricting the staff's ability to explore new technology and new approaches has been a major challenge for us".

The task has been accomplished at AGS by implementing a system which encourages sharing of many resources and by organizing computing support to facilitate communication.

Six VAX minicomputers provide a computing spine which delivers common services, such as:

- large data bases
- cartography
- contouring
- data visualization
- administrative systems (word processing, electronic mail, spread sheets and a calendar function)

These processors also provide:

- a software development environment
- printing/plotting
- mass storage
- CPU cycles for numerical modelling/simulations

Through the Alberta Research Council (ARC) network, the Survey can also communicate and interchange data with the private sector, other ARC departments, provincial agencies, universities, and research institutes.

Seven AGS staff support the system on a part time basis. These employees also directly support the geologic components of AGS programs and projects. This arrangement - having the same people directly involved in both general departmental computing and project support - was chosen deliberately to encourage coordination of computing efforts throughout AGS.

The department currently runs a system with nearly three dozen processors, two large-format pen plotters, two small and two large laser printers, as well as a large collection of other input-output devices.

The minicomputer spine is complemented by more than two dozen desktop computers, the majority of which are Apple Macintoshes. This desktop system provides general support for drawing, report generation, data capture and office automation functions. Linked together in a local area network with a gateway to the VAX spine, the MacIntoshes have access to printing, plotting, file and data base services. The gateway also allows the Macintoshes to access resources and processors elsewhere in ARC.

ARC's Information Services Department provides further computing expertise to the department in the areas of communications, networking and basic system operations, freeing AGS staff to dedicate more of their efforts to issues specific to AGS.

The department has undertaken a significant computerization of most of its research and support activities as part of an ongoing program to improve its productivity, to extend the scope of its activity, and to serve our internal and external clients more efficiently. This process was accomplished through the application of a wide range of AGS expertise, a client/server architecture, and by sharing system support among staff.

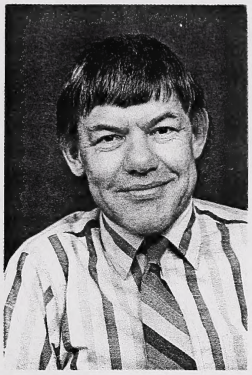
***

For more information,
please contact:
Andre Lytviak 438-7608

New AGS department head announced

Dr. Brian Barge, president of the Alberta Research Council, is pleased to announce the appointment of Dr. Jan Boon as head of the Alberta Geological Survey (AGS). He replaces Dr. Rand Harrison, now Assistant Deputy Minister, Alberta Technology, Research and Telecommunications.

Dr. Boon has been with the Alberta Research Council since 1976 and headed the AGS from 1985 to 1990. In September 1990, he became director of Development and Planning where he was responsible for alliances, international affairs and business development. He played an important role in the development of the Alberta Research Council's corporate plan. In addition to his normal duties as head of the Alberta Geological Survey, Dr. Boon will continue to be involved in the Research Council's international activities and contacts.



Dr. Jan Boon

Alberta's CBM potential to be unveiled in spring 1993

Mark your calendars. Next spring, the Alberta Geological Survey (AGS) will release its findings on the coal bed methane (CBM) potential of Alberta.

The Alberta Research Council Bulletin will include much of the data generated from Phase I of the departments CBM consortium. Sequence stratigraphic techniques will also be applied to analyze the factors which controlled the initial formation of the coal zones. This analysis will draw heavily on the AGS coal geology capabilities, including data gathered during studies carried out over the last decade and new subsurface cross sections constructed within each of the major Cretaceous coal zones.

In June 1991, the AGS completed a confidential, industry-funded report that evaluated the CBM potential in the plains and foothills of Alberta. This report presented a series of maps and regional subsurface cross sections that showed the detailed stratigraphy and occurrences of all the major coal zones in Alberta. An evaluation of the rank of the coal in these zones was also conducted to estimate the potential for methane generation. Once the confidentiality agreement covering the CBM report expires in June 1993, the new Bulletin will be released.

The incorporation of sequence concepts into the Bulletin will provide a state-of-the-art stratigraphic framework for analyzing the regional occurrence of coal within the Alberta foreland succession.

The thickest and most extensive coals typically occur at specific positions in the transgressive-regressive cycles that characterize deposition in the basin. These cycles result from the interactions of eustatic sea-level variation, tectonic movement and variations in sediment supply. Analysis of this cyclicity allows for the development of predictive models for coal accumulation which can be applied in the exploration for economically viable CBM resources.

Sequence stratigraphic studies have been ongoing within the AGS over the past several years. Papers on this topic were published by Don Macdonald, Willem Langenberg and Rudy Strobl in 1988, and a sequence stratigraphic model for the gas-bearing Milk River Formation has recently been developed by Shaun O'Connell.

***

For more information,
please contact:
Shaun O'Connell
438-7676

Atlas con't

overhead costs. "It's important to note that these contributions were made in very difficult economic times," adds Prentice. "All contributors had to make sacrifices to ensure that the project could carry on."

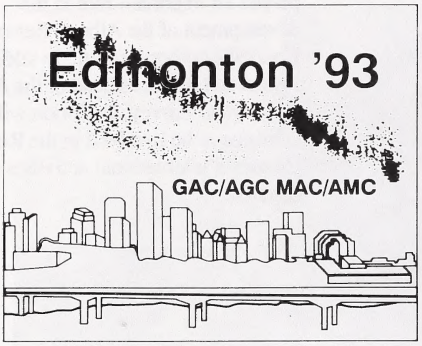
With the printed form of the Atlas now in the mid-stages of drafting and the final stages of editing, planning for the electronic form of the Atlas is underway. "The delivery and transfer of the information to the private sector is a key consideration," Prentice explains. "People are now considering issues such as how to search the data appropriately and what formats should be used for delivery. The Survey has the capability and contacts to maintain this information and make it available to industry."

***

For more information,
please contact:
John Kramers
438-7603

National Library of Canada
Bibliothèque nationale du Canada
3 3286 52797812 2

Come See Us In Edmonton



Geological Association of Canada
Mineralogical Association of Canada

Joint Annual Meeting
May 17 to 19, 1993

For more information please contact:

John Kramers
c/o Alberta Gelogical Survey
P.O. Box 8330 Station F
Edmonton, Alberta
T6H 5X2
tel 438-7603
fax 438-3364

Publications

Environmental Geology

- Results from the deep waste disposal workshop, 1991. Information series 115, $10.
- Hydrogeology of the Swan Hills Area, Alberta: Evaluation for deep waste injection. Bulletin 58, $15.
- Evaluation of effects of deep waste injection in the Cold Lake area, Alberta. Bulletin 60, $15.

Petroleum Geology and Basin Analysis

- The origin, history and regional structural development of the Peace River Arch, western Canada basin. Contribution series no. 2029, $3.
- Hydrogeology, geopressures and hydrocarbon occurrences, Beaufort-Mackenzie basin. Contribution series no.1871, $3.
- Tectonic loading in the Canadian cordillera as recorded by foreland basin sedimentation. Contribution series no. 2030, $3.
- Hydrochemistry of the Peace River Arch area, Alberta and British Columbia. Open file report 1990-18, $10.

Coal Geology

- Regional coal maps (1:250 000) $85 for hardcopy or $20 on diskettes each:
  - Donald Flats; NTS 83E/16 Open file report 1991-7
  - Bolton Creek; NTS 83L/2 Open file report 1991-8
  - Copton Creek; NTS 83L/3 Open file report 1990-9
  - Praire Creek; NTS 83L/7 Open file report 1990-10
  - Cutbank River; NTS 83L/10 Open file 1991-11
- Coal bed methane in Alberta - what's it all about, seminar notes. Information series 108, $20
- Coal Geology and its application to coal bed methane reservoirs, Information series 109, $15.
- Surface geophysical coal research project (1984-1986), final report, 1991. Information series 112, $20.

Oil Sands Geology

- McMurray Formation and Wabiskaw Member (Clearwater Formation): regional perspectives derived from the north Primrose area, Alberta, Canada. Contribution series 2038, $3.
- Resource characterization of the central region of the lower Cretaceous McMurray/Wabiskaw deposit, Athabasca oil sands area, northeastern Alberta. Contribution series no.1639, $3.

Minerals

- Alberta mineral deposits and occurrences file. Open file report 1991-17, $20.
- The ceramic potential of Alberta clays and shales, 1991. Economic geology report #7, $15.
- An evaluation of the mineral potential in norteastern Alberta, Open file report 1991-6, $20.
- Placer gold occurrences in Alberta. Open file report 1990-9, $10.

Publications can be obtained from: Alberta Research Council, Publications Office, Box 8330, Station F, Edmonton, Alberta, T6H 5X2, Telephone: (403) 450-5390 , FAX: (403) 461-2651 (major credit cards accepted).